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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/662,219

09/14/2000

Kei Yoshikawa

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22852

7590

08/28/2006

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EXAMINER

AHMED, SAMIR ANWAR

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,219

Applicant(s)

YOSHIKAWA ET AL.

Examiner

Samir A. Ahmed

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/13/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-42 is/are pending in the application.
- 4a) Of the above claim(s) 17-21, 23-27 and 30-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16, 22, 28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The amendment filed 2/13/04 have been entered and made of record.
2. Applicant has canceled original claims 1-4, 6-14 of an elected species without traverse corresponding to the species of the first embodiment of Figs. 2, 3A, 3B, 3C, 3D, 3E, 3F, and 3G and filed new claims 15-42 that reads on all different species in the application.
3. Newly submitted claims 17-21, 23-27, 30-42 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claims 15-42 are directed to different species as shown by the different embodiments and Figs 1- 19E, claims 15-16, 22,28-29 are directed to the previously elected claims 1-4, 6-14, corresponding to species of Figs. 2, 3A, 3B, 3C, 3D, 3E, 3F, and 3G. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 17-21, 23-27, and 30-42 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claim 29 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 29 recites, "wherein the line width is further increased by half the design grid width and/or an alignment margin", lines 1-2. A claim with "and/or" requires the specification to show three embodiments, one embodiment showing "the line width is increased by half the design grid width" which is satisfied by the originally filed specification at least in the first embodiment, a second embodiment showing "the line width is increased by an alignment margin" which is not satisfied by the originally filed specification, and a third embodiment showing "the line width is increased by half the design grid width and an alignment margin" which is satisfied by the originally filed specification at least in the eighth embodiment. The use of "and/or" constitutes new matter because nowhere in the originally filed specification there is an embodiment showing "the line width is increased by only alignment margin".

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the line width is increased by half the design grid width and/or an alignment margin" (see paragraph 5 above) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 15-16, 22 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (U S Patent 5,879,844).

As to claim 15, Yamamoto discloses a pattern correcting method of a mask for manufacturing a semiconductor device comprising:

extracting a correction portion to be corrected from a mask pattern on the mask [the edges of conductors to be corrected (correction portions) from a mask pattern are extracted by logical product (col. 8, lines 24-37, Fig. 17, 18c, col. 16, lines 40-44)];

obtaining a surrounding environment of the correction portion [the surrounding layout is obtained (col. 9, lines 3-13), the surrounding environment is the surrounding layout of the adjacent pattern of the mask pattern in this case the diffusion layer conductors (Fig 18c, col. 16, lines 44-48)] ; and

giving a variable correction amount to the correction portion in accordance with the surrounding environment [variable correction values based on the distance between the correction portion and its adjacent pattern is obtained from a reference table which assigns a correction value to the correction portion based on its distance from the adjacent pattern (Col.16, line 64-col. 1line 10)].

As to claim 16, Yamamoto further discloses, wherein the correction portion is an overlapped portion where a line portion overlaps a contact portion [the correction portion is an overlapped portion where the edge of the shaded areas of interest in Fig. 18c (line portion) overlaps the dotted areas (contact portion) (Fig. 17, step 12; Fig. 18c, col. 16, lines 44-47)].

As to claim 22, Yamamoto further discloses, wherein the surrounding environment of the correction portion is a space width between the line portion and another line portion [Fig 18c shows the adjacent pattern as a parallel conductor (surrounding environment of the correction portion) spaced by a distance (space width) between the edge of the of interest (line portion) and another line portion].

As to claim 28, Yamamoto further discloses wherein the variable correction amount is a line width given to the overlapped portion, and the line width is increased by an integral multiple of a design grid width in accordance with the space width [Table 3 shows a rule-based correction table that shows the correction values that is used to shift the line in the overlapped portion in the direction of its width (i.e. the value is a line width) to increase its width with an integral multiple of a design grid width based on its distance from an adjacent pattern grid (col. 17, lines 1-10)].

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (U S Patent 5,879,844).

As to claim 29 [As best understood by the Examiner], Yamamoto does not disclose, wherein the width is further increased by half the design grid width and/or an alignment margin.

However the use of rule based correction table to correct the line width of a line in a mask pattern, where the bias value (design grid width) is half the spacing width is well known and conventional in the art as disclosed by the background of Yamamoto (col. 3, table 1) where the correction design grid width is half the spacing width. It would have been obvious to one having ordinary skill in the art at the time the invention was

made to use a well-known and conventional method of the art to modify Yamamoto's method by increasing the width by half the design grid width. The modification would have been motivated by conventional requirements such as the range of correction, the availability of the software or hardware, etc.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

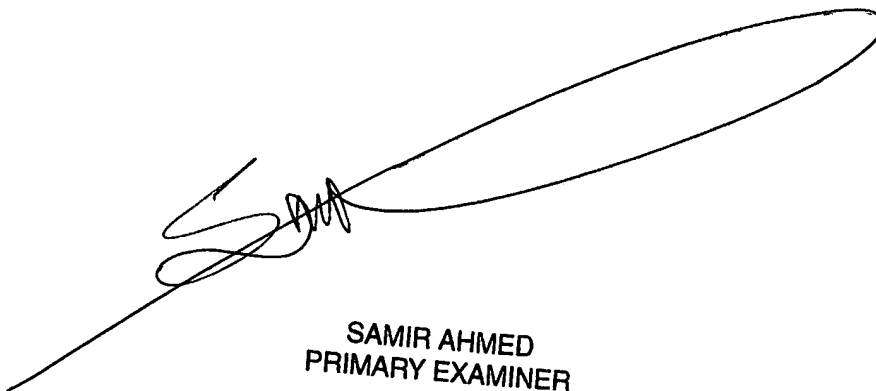
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir A. Ahmed whose telephone number is (571) 272-7413. The examiner can normally be reached on Mon-Fri 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SA



SAMIR AHMED
PRIMARY EXAMINER